SK18A

18 Pins PIC START-UP KIT
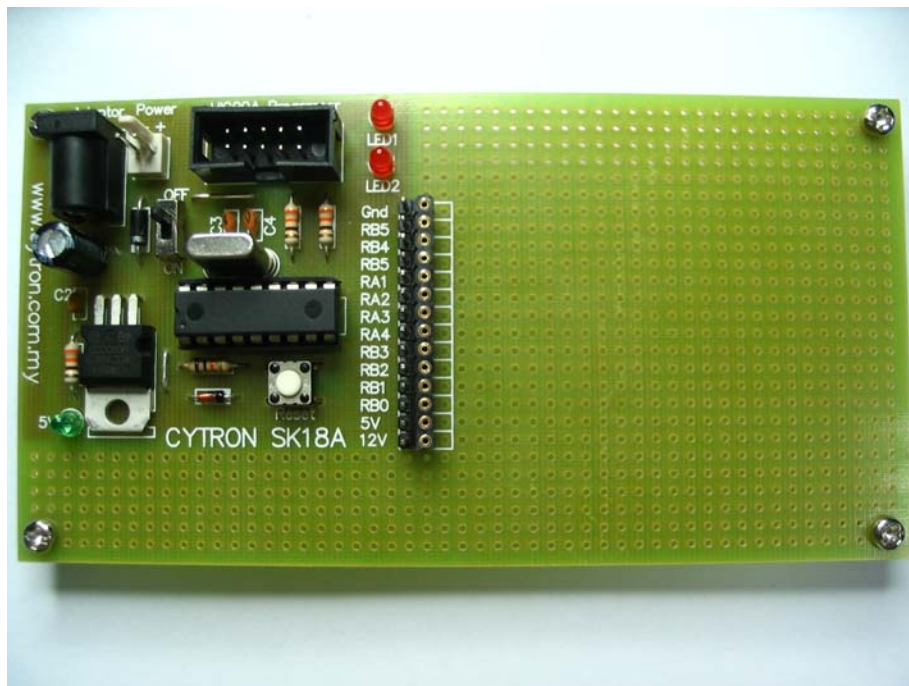
User's Manual

V1.1

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1. INTRODUCTION AND OVERVIEW

SK18A is designed to offer an easy to start board for PIC MCU user. However, all interface and program should be developed by user. This board comes with basic element for user to begin project development. It offers plug and use features. This kit is designed to offer:

- Nice outlook
- Industrial grade PCB
- Every board is being tested before shipped to customer
- Compact, powerful, flexible and robust start-up platform
- Suitable for hobbyists and experts
- Save development and soldering time
- No extra components required for the PIC to function
- **11 I/O pins are nicely labeled** to avoid miss-connection by users
- Connector for UIC00A (low cost USB ICSP PIC Programmer) offer simple and fast method to load program
- No more frustrated work plugging PIC out and back for re-programming
- Perfectly fit for **18 pins PIC16F MCU**
- With UIC00A, program can be loaded in less than 4 seconds
- **Dimension:** 13.3cm x 6.9cm

SK18A come with:

- 5V voltage regulator (1A max)
- 20MHz oscillator
- Reset button
- 1 x programmable push button
- 2 x programmable LED
- Box header for UIC00A
- On/Off switch for main power
- DC adaptor socket as power input
- And all the necessities to eliminate users difficulty in using PIC

Users are able to utilize the function of PIC by directly plugging in the I/O connectors in whatever way that is convenient to user. With UIC00A connector on board, user can start developing projects and have fun with this kit right away. This kit comes **WITHOUT** PIC microcontroller to give the freedom for user to choose PIC type.

This document explains the method to use SK18A.

2. PACKING LIST

Please check the parts and components according to the packing list. If there are any parts missing, please contact us at sales@cytron.com.my immediately.
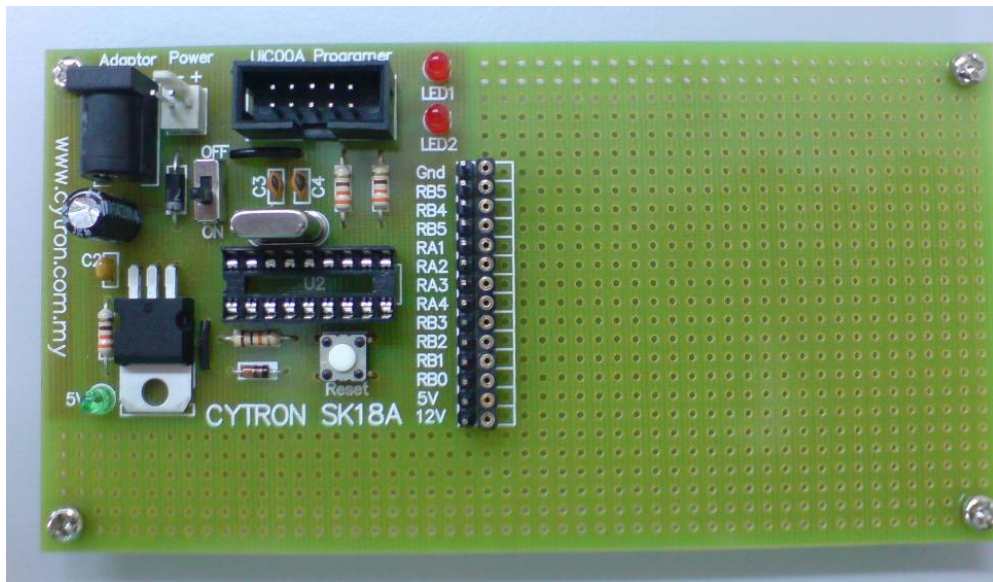
1. 1 x SK18A board with all components shown soldered
2. PIC MCU – Not included, please purchase separately from Cytron website
3. UIC00A – Not included, please purchase separately from Cytron website
4. User Manual – Not included, please download from Cytron website

3. BOARD LAYOUT
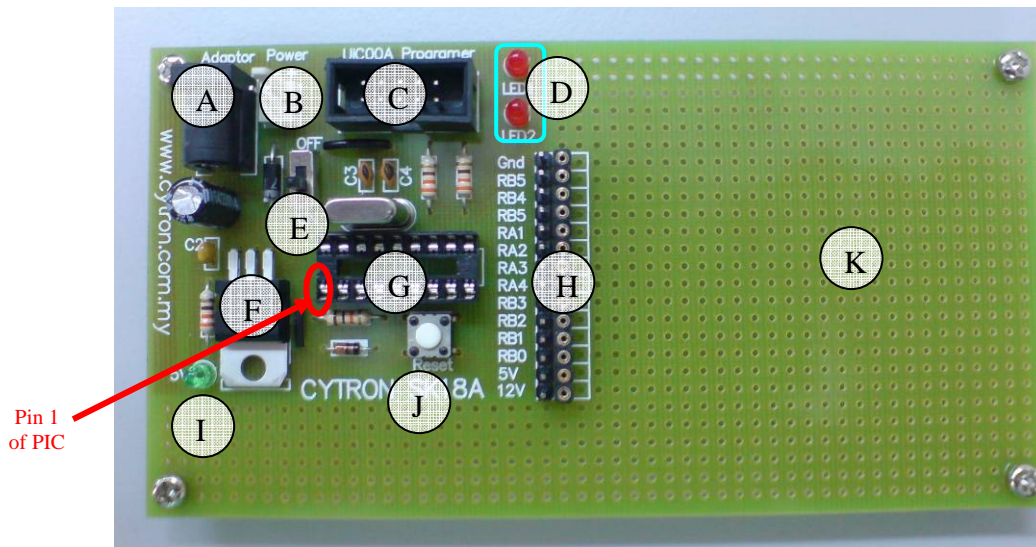
Label	Function	Label	Function
A	DC power adaptor socket	**G**	18 pin IC socket for PIC MCU
B	Battery connector	**H**	Header pin and turn pin
C	Box Header for UIC00A Programmer	**I**	Power indicator LED
D	Output LEDs from PIC MCU	**J**	Reset button
E	Slide switch for main power supply	**K**	development area
F	5V regulator		

A – is a DC power adaptor socket for user to plug in DC adaptor. The input voltage should be ranged from 7 to 15V.

B – is a 2510 2 way connector for battery input. The battery voltage should be between 7 to 15V. Please ensure the polarity of voltage is correctly plugged before power up SK18A. The "+" and "-" is have been labeled at the side of connector.

C – is a 2x5 box header for UIC00A, USB ICSP PIC Programmer.

D – consist of 2 LEDs (connected to RB6 and RB7) as active High output for PIC MCU. These LEDs are controllable from PIC MCU.

E – is a slide switch to On/Off the power supply from DC adaptor or Battery connector. Pushing the switch down will ON SK18A.

F – is a 5V voltage regulator 1A maximum.

G – 18 pin IC socket for user to plug in any 18 pin PIC16F MCU (8 bit). Of course the IC package should be PDIP. Please ensure the first pin is at the top side.

H – Consist of 14 lines of header pin and turn pin. It is fully compatible between SK18A. Turn pin offer simple way to check voltage with multi-meter probe. 14 pins of PIC MCU are extended out to these pin except OSC (connected to crystal), RB6 and RB7 (connected to LEDs and UIC00A box Header).

I – is on board 5V indicator LED. It will light ON as long as the input power is correctly connected and the slide switch is ON.

J – is a push button with the function of Reset for PIC MCU.

K – is a development area for user to solder electronic components as input or output for PIC MCU.

4. PRODUCT SPECIFICATION

SK18A is designed to offer starting up platform for development, the specification of PIC MCU used should be referred.

Absolute Maximum Rating

| Symbol	Parameter	Min	Max	Unit
V_{CC}	Operating voltage	7	15	V

Battery or DC adaptor can be used.

Note: Only 1 power supply should be provided to SK18A.

5. INSTALLATION (HARDWARE)

SK18A come with UIC00A - ICSP USB programmer connector to offer simple way for downloading program. From user feedback and experience, using UIC00A ICSP programmer is very easy and save plenty of development time.

5.1 Loading Program Using UIC00A Programmer

Connect SK18A as shown in following figure.
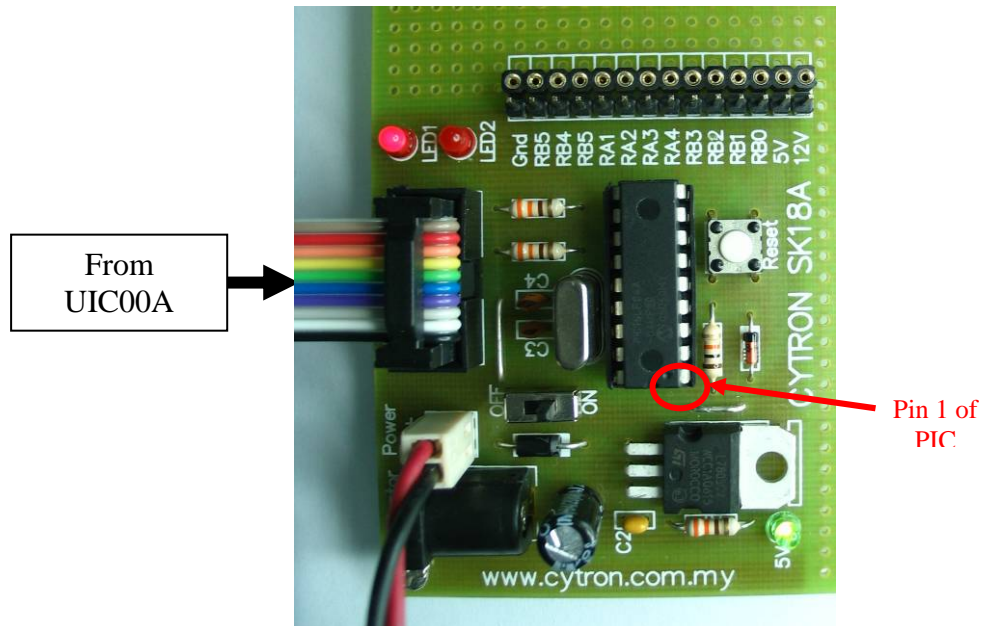
SK18A should be powered either from battery or DC adaptor. Plug 18 pins PIC16F microcontroller, please ensure the first pin of microcontroller is plugged correctly. Power up SK18A by turning the slide switch to "ON". Now, the hex code is ready to be loaded to SK18A. For the usage of UIC00A, please refer to UIC00A User's Manual.

RB7 and RB6 have been connected to UIC00A connector; both these pins are used for ICSP. User is advice not to use these pin as input. Even when using as output, RB7 or RB6 pin are recommended to be used in controlling non critical device such as LED, LCD, 7 segments or buzzer. It is recommended to isolated ICSP signals from application circuit by using series resistor (range 220 ohm and above). Please refer to UIC00A User's Manual for further details. Hence, in SK18A, RB7 and RB6 were designed as active High LED output.

6. GETTING STARTED

SK18A is ready to be plug and use, no extra driver or software is necessary. It is a hardware platform, for the use of UIC00A, please install the necessary driver or configure the correct setting in window. SK18A is ready be used to start the electronics interface.

The I/O of the microcontroller can be accessed through few methods:

1. I/O port (to electronic components)
   - Connect the components that are needed onto the I/O port.
   - Connect the electronic device to PIC MCU I/O port through Header pin.
   - Extend the I/O port to development area using jumper wire.
   - User may also solder the necessary interface to PCB like ordinary donut board.
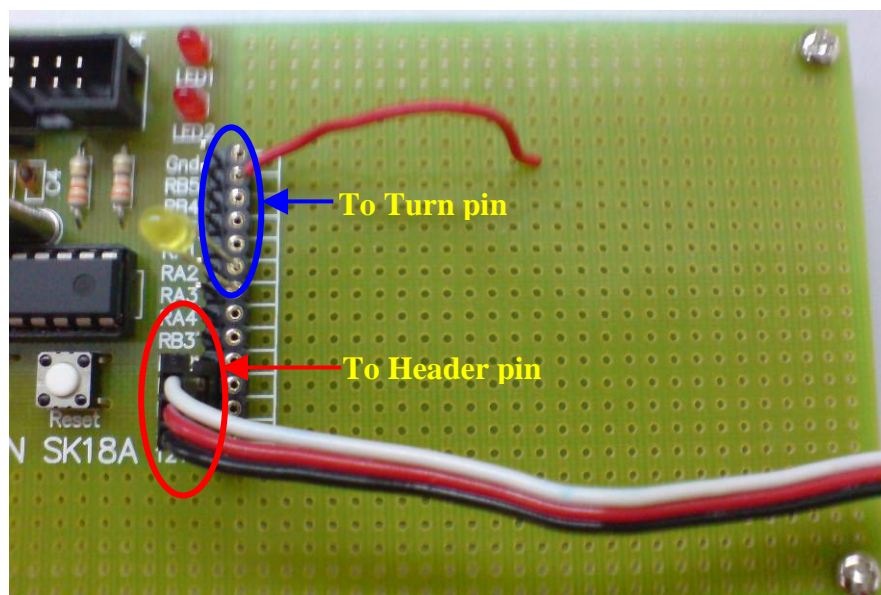
2. I/O port (to multi-meter)
   - Put the multi-meter probe on the turn pin to check the voltage.

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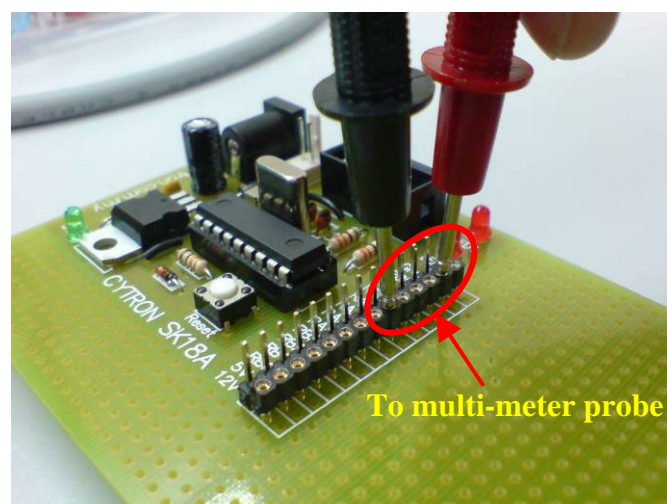
7. WARRANTY

- ➢ Product warranty is valid for 6 months.
- ➢ Warranty only applies to manufacturing defect.
- ➢ Damage caused by miss-use is not covered under warranty.
- ➢ Warranty does not cover freight cost for both ways.

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Appendix A